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A Bibliography and Brief Biography of G. Alan Solem, 1931–1990

by

ELIZABETH-LOUISE GIRARDI

Division of Invertebrates, Field Museum of Natural History,
Roosevelt Road at Lake Shore Drive, Chicago, Illinois 60605, USA

G. Alan Solem was born on 21 July 1931, in Chicago, Illinois, the son of a physician and a mother who was active in church work. The family lived in Oak Park, a suburb of Chicago. His association with the Field Museum of Natural History began in 1946, when he began work as a volunteer in the Division of Insects. By 1949, he was working with Dr. Carl P. Schmidt, Chief Curator of Zoology, and Dr. Fritz Haas, Curator of the Division of Lower Invertebrates.

He attended Haverford College, Haverford, Pennsylvania, obtaining his B.S., *magna cum laude,* in 1952. He did his graduate study at the University of Michigan, Ann Arbor, obtaining his M.A. in 1954 and his Ph.D. in 1956. At Michigan his mentor was Professor Henry Van der Schalie, and he worked during the summers at the Academy of Natural Sciences, Philadelphia, with Dr. Henry Pilsbry, as well as at the Field Museum with Dr. Haas.

In 1956 he joined the scientific staff of the Field Museum as the Assistant Curator of Lower Invertebrates, succeeding Dr. Haas as Curator in 1959, and becoming Curator of Invertebrates when the name of the Division was changed in 1971. He was still in that position at the time of his death.

Beginning in 1971, he was Lecturer for the Committee on Evolutionary Biology at the University of Chicago, where he also taught graduate seminar courses. From 1967 to 1975 he taught both undergraduate and graduate courses at Northwestern University, and directed the research of graduate students at both Chicago and Northwestern. He was appointed a Research Associate in the Department of Biological Sciences at Northwestern in 1970, and at the Australian Museum in 1976. He taught an adult education class in the operation and use of the scanning electron microscope at the Field Museum, 1978–1982.

He served as Vice President, President, and Past President of the American Malacological Union, as well as a Member or Chairman of many committees of that organization. He was a Counselor, Panel Member, Committee Chairman, or Chairman of four other professional societies, and was on the editorial boards of six scientific publications. He was a Member, Fellow, or Life Member of 10 scholarly scientific societies in four countries, and was named an Honorary Life Member of the Malacological Society of Australia.

He participated in 23 international congresses and meetings, presenting papers at nearly all of them. At 11 of the meetings, he was a symposium organizer and/or invited speaker.

In his 33 years at the Field Museum, he made 19 field trips, many including more than one country. In addition to two trips within the United States, he went once each to Panama, the Lesser Antilles, and Namibia, and three times to New Zealand and various small Pacific islands. However, the bulk of his field work was carried out in Australia, to which he journeyed 11 times. In all, he was out in the field for 40 months: three and a third years, 10% of his time at the Field Museum.

I began working for Dr. Solem as a volunteer in 1963, and continued as volunteer, student, and, finally, colleague over the next 27 years. With his encouragement I entered graduate school, and he was one of my teachers, a member of my doctoral committee, and the director of my research. I found him to be a perfectionist, insisting that everyone who worked for him put forth his or her very best, as he always did himself. He was a leader, rather than a driver: he never asked anyone to do anything that he was not willing and able to do himself. If a student was in difficulties, he could be patience personified, explaining the problem over and over again—*if* the student was really trying to understand. If he thought the student was just being lazy, he could be very brusque, and those who attempted to get by with second-rate work got very short shrift indeed.

Writing of the results of Dr. Solem's Australian field work, Victoria Huff, former collection manager in the Division of Invertebrates, says in a memo (1990) to Field Museum administration, quoted in a personal communication to me:

As a result of Dr. Solem's vigorous research activities and the enthusiam that he generated among field associates and colleagues in Australia, Field Museum has built an impressive collection of Australian land snails. These collections include over 8,000 lots of land snails, many preserved in alcohol and suitable for further anatomical studies, virtually all with extremely precise locality data. Associated data include: shell measurements of many lots; over 5,500 SEM photographs of shells, jaws, and radulae; hundreds of detailed scientific illustrations of anatomy and shells; well over 300 computer-generated distribution maps; and a limited amount of frozen tissue samples, suitable for at least preliminary electrophoretic studies.

A colleague, Dr. Rupert L. Wenzel, Curator Emeritus of Insects, has written an excellent summary of Dr. Solem's work:

> Solem's field work and research dealt with molluscs of many parts of the world, but his most important work focused on snails of the Pacific islands and the Australian Region. . . . He became interested in the problem of how numerous closely related species, presumably from a single or only a few colonizations, could evolve on one small island, possibly as a result of conditioning to specific food resources and microniches, leading in turn to microgeographic and reproductive isolation, followed by differentiation into species that differed in their feeding specializations.
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> This 'flowering' of species was exemplified by the endodontid snails . . . on the tiny Pacific island of Rapa, and appeared at variance with accepted biogeographic theory on island colonization and establishment of biotic equilibrium. It also conflicted with the then widely accepted doctrine . . . that new species did not form in the absence of (macro) geographic isolation. Solem's concern with these problems led him to pursue detailed analyses of differences in the feeding mechanism of snails, correlating them with differences in reproductive anatomy and niche and food specialization. These analyses are essential to delineating their evolutionary relationships and to exploring the history of their distribution through geologic time. . . .
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> [He was interested in Australian snails because] it was evident that they represented a largely unknown fauna and seemed to pose questions similar to those encountered in his studies of island faunae. In some ways they proved to be even more interesting because isolated 'islands' of vegetation possessed clusters of species that could interact for feeding and reproduction only during the scarce and very short periods of rain. Between rains, they underwent long periods of dormancy. . . . Additional field trips . . . added much more material and raised additional questions concerning the evolution and relationships of the [Australian] snail fauna to that of the rest of the world. (WENZEL, 1990)

Alan Solem was an extraordinarily productive writer. In addition to 45 popular articles and a children's book, he published 150 scientific papers, including encyclopedia articles, chapters for textbooks, and one semitechnical book. Two more papers were published after his death in 1990, and he left five completed family accounts to appear in *Fauna of Australia,* as well as 11 other scientific papers in press or submitted. Evaluating Dr. Solem's productivity, Dr. Wenzel writes:

> [Solem's publications] set new high standards for the study and description of molluscs as well as for analysis of the data. . . . He described dozens of new genera and several hundred new species and subspecies, a remarkable output, but in itself not as important as the generalizations as well as other research which they make possible. (WENZEL, 1990)

As an editor and teacher of scientific writing, he held his students to his own high standards. Multiple rewrites were sometimes required before he was satisfied, but his students understood that he would never allow them to write themselves into indefensible corners. If a paper left the Museum with the Solem *imprimatur,* its acceptance for publication was assured.

Dr. Solem's most recent scientific illustrator, Mrs. Linnea Lahlum, who worked for and with him for 10 and a half years, spoke at his memorial gathering. A copy of her remarks was given to me, and among them were the following:

> He was straightforward. He did not pretend. . . . He was extremely generous and considerate . . . always ready to listen and give what support he could. As busy as he was, he was never too preoccupied to care. . . .
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> He had a drive for achievement that was unusual. The atmosphere of productive activity that he established was infectious. . . . He was demanding, but be made you feel that he had perfect faith in your ability to meet the demand. He had the quality of inspiring excellence. . . . [He was] genuinely appreciative of the work you did [and] never took your work or its quality for granted. . . . He had his own standard of excellence he was always testing himself against, and he knew that we, too, had our own standards, and must be encouraged to surpass them.
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> . . . Working with [him] was never boring. He *made* it interesting. There was a sense of an adventure in progress. He took such enjoyment in it, such relish of the discovery of the new. [He] once wrote, "The joy of scientific research. Partly answer one question, reveal a dozen others. Learn a bit, question a lot. Improve the quality of the questions asked. A continuous and enjoyable process on which I'm well along." (SOLEM, 1981).

He was a grantsman extraordinaire. Between 1961 and 1988, he was awarded 15 grants totaling $771,000, with additional funding from private individuals. One of his

grants, from the National Science Foundation, enabled the Field Museum to acquire its first electron microscope. Thanks to his high professional standing and persuasiveness, at least three major mollusk collections were given to the museum. The Hubricht Collection of eastern North American land snails, comprising 500,000 specimens in 48,000 lots, had been promised to the Museum before Dr. Solem's death, and arrived shortly thereafter. He had been looking forward eagerly to its coming, because he said it would make the Field Museum's holdings "the finest land snail collection anywhere."

He died on 26 February 1990, leaving a wife, Sylvia, and two adult children, Anders and Kirsten. He is also survived by his sister, Elizabeth (Mrs. George) Dutton. He is most sorely missed, both personally and professionally, by all who knew, or knew of, the man and his work.

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Note: At the time of Dr. Solem's death, six of his scientific papers were in press, 11 had been submitted for publication, and one was in review. The paper in review and one of those in press were published after his death, and appear above (1990). When all of the remaining papers have been published, an addendum to this bibliography will appear. A list of his new molluscan taxa will also appear at a later date.

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